He has cultivated *Paramecium* thru more than 1230 generations, which occurred at an average rate of more than 3 divisions in two days. These observations make it seem probable that in nature *Paramecium* does not undergo this lowering of vitality, because of the stimulus of changing external conditions.

NOTES ON THE TECHNIC OF TUBERCLE BACILLI

1. Gassi:
   - Make smear preparations;
   - Stain in warm eosin solution for one or two minutes. (To 5c.c. of 1 per cent eosin solution add a crystal of sublimate the size of a lentil.
   - Wash in water.
   - Treat with a mixture (0.5 vol. NaHo, 1 vol. potassium iodide, and 100 vols. of 50 per cent alcohol) until preparation assumes a pale green color.
   - Rinse carefully with alcohol, and wash with water.
   - Stain for two or three seconds in a solution:—methylen blue 1 vol.; abs. alcohol 10 vols.; 0.5c.c. hydrochloric acid and 90c.c. distilled water.
   - Wash thoroly and mount.
   - The tubercle bacilli are red, the rest blue.
2. Bernhardt's method of examining sputum:
   - Place 5c.c. of sputum and 20c.c. of a 20% solution of commercial antiformin in a stoppered bottle.
   - When homogeneous, pour in ligroin until a layer 3-5 mm. thick is formed.
   - Shake until well mixed, and allow to stand at temperature of room for ½ hour.
   - Take out loop-fulls of the layer immediately beneath the ligroin. Fix, stain, and store the films in the usual way.
3. Hammerl's method of examining sputum:
   - Five parts of a solution, consisting of 99% ammonia and 1% caustic potash, is mixed with 1 part of sputum and vigorously shaken until homogeneous.
   - To 15c.c. of this mixture add 5c.c. acetone.
   - Centrifuge for half an hour.
   - Make films from the deposit and stain in the usual way.

4. Coppin's method:

Make thin smear on glass. Fix by heating.

Stain by covering with Ziehl's carbol-fuchsin, diluted with ½ its volume of dist. water.

Heat specimen until it steams well, and put aside for 2-5 minutes.

Wash excess of carbol-fuchsin with water.

Place in bath of 10% sulphuric acid until smear fades to an almost invisible gray or pink.

Wash well until it appears merely cloudy when held to light.

Cover smear with 1% solution (aq.) of picric acid for 10-50 seconds. Wash and mount as usual.

This method shows the tubercle bacilli as rose-red beaded rods upon a pale yellow field.

BACTERIAL INFECTION BY ENDO-PARASITES

A. E. Shipley, in the *Proceedings of the Royal Society,* Victoria, cites a case of the bacterial infection of the swim-bladder of a trout through the migration of a nematode worm from the digestive tract to that point. This, taken with other known similar cases, leads him to suspect that in an analogous way human entozoa, passing from the digestive tract with its numerous microbes, may be the means of infecting distant organs in man, just as really as in the case of the ecto-parasites,—even tho less frequently.

Mehlhose has recently cited numerous cases in which bacteria have been found in the bladder-forms of tapeworms.

LONGEVITY OF TRICHINA

In an examination, made in Posen, of nearly 100 bodies of persons more than 60 years of age, it was found that almost 20% showed cysted *Trichina.* From facts brought out in connection with the examination, there is strong ground for concluding that *Trichina* may live more than 40 years without losing its power to develop.

SYMBIOSIS AND PARASITISM

A most interesting quadruple mixture of symbiosis and parasitism is reported by a French observer, in which three species of micro-organisms figure. A ciliate infusorian—*Trichodina paradoxa*